### **BEST AVAILABLE COPY**

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



### 

(43) International Publication Date 2 September 2004 (02.09.2004)

PCT

(10) International Publication Number WO 2004/074622 A3

(51) International Patent Classification7: 17/02, 29/00

E21B 19/16,

(21) International Application Number:

PCT/US2004/004740

- (22) International Filing Date: 17 February 2004 (17.02.2004)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/448,526

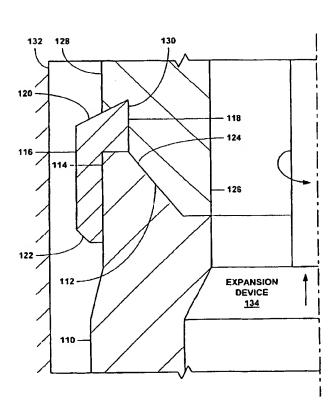
18 February 2003 (18.02.2003) US

- (71) Applicant (for all designated States except US): ENVENTURE GLOBAL TECHNOLOGY [US/US]; 16200 A. Park Row, Houston, TX 77084 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): COSTA, Scott [US/US]; 2011 Willow Point, Kingwood, TX 77330 (US).

- (74) Agent: MATTINGLY, Todd; Haynes and Boone, L.L.P., 901 Main Street, Suite 3100, Dallas, TX 75202 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,

[Continued on next page]

(54) Title: PROTECTIVE COMPRESSION AND TENSION SLEEVES FOR THREADED CONNECTIONS FOR RADIALLY EXPANDABLE TUBULAR MEMBERS



(57) Abstract: A radially expandable multiple tubular member apparatus includes a first tubular member (110) and a second tubular member (128) engaged with the first tubular member forming a joint. A sleeve (116) overlaps and couples the first and second tubular members at the joint.

# BEST AVAILABLE COPY

### WO 2004/074622 A3 INDIANGEMENT OF THE REPORT OF THE REPORT

TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

- of inventorship (Rule 4.17(iv)) for US only

Published:

with international search report

 before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 31 March 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

## BEST AVAILABLE COPY

#### INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/04740

|  |  | 101/0304/04/40  |                              |
|--|--|---|------------------------------|
| A. CLASSIFICATION OF SUBJECT MATTER  |  |   |                              |
| IPC(7) : E21B 19/16, 17/02, 29/00  |  |   |                              |
| US CL : 166/380, 242.1, 242.6, 206, 207; 285/333, 334, 382.1, 53   |  |   |                              |
| According to International Patent Classification (IPC) or to both national classification and IPC  |  |   |                              |
| B. FIELDS SEARCHED   |  |   |                              |
| Minimum documentation searched (classification system followed by classification symbols)  |  |   |                              |
| U.S.: 166/380, 242.1, 242.6, 206, 207; 285/333, 334, 53, 382.1, 382.4  |  |   |                              |
| ·  |  |   |                              |
|  |  |   |                              |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  |  |   |                              |
|  |  |   |                              |
|  |  |   |                              |
|  |  |   |                              |
| Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)   |  |   |                              |
|  |  |   |                              |
|  |  |   |                              |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT   |  |   |                              |
| Category *   | Citation of document, with indication, where ap  | propriate, of the relevant passages   | Relevant to claim No.        |
| X  | US 6,263,968 B1 (FREEMAN et al) 24 July 2001 (2  | 14, 16, 25, and 27  |                              |
|  | 51-64, column 10, line 4 through column 11, line 15  |   |                              |
| Y  | 1-13, 15, 17-24, 26,   |   |                              |
| 1  |  |   | 28-46, 48, 49, 51-58,        |
| į  |  |   | 66-85                        |
|  |  |   |                              |
| Y  | US 4,854,338 A (GRANTHAM) 08 August 1989 (0  | 8.08.1989), Figs. 3-4, column 6, lines                                      | 1-13, 15, 22-24, 26,         |
|  | 25-31.   |   | 56, 57, 66, 77, and 80       |
| Y  | US 5,031,370 A (JEWETT) 16 July 1991 (16.07.1991), Fig. 8 and claim 11. 17-20, 28-31, and 83           |   |                              |
|  |  |   |                              |
| Y  | US 4,401,325 A (TSUCHIYA et al) 30 August 1983   | 3 (30.08.1983), Figs. 2-4, column 2,  | 21, 32, , 58, 61, 66-        |
|  | line 52 through column 3, line 2; column 3, line 34 through column 4, line 13. 73, 75, 76, 78, 79, 81, |   |                              |
|  |  |   | 82, 84, and 85               |
|  |  |   |                              |
| Y  | US 5,931,511 A (DELANGE et al) 03 August 1999 (03.08.1999), Figs. 1-1A.                                |   | 33-44                        |
| 1  |  |   |                              |
| Y  | US 4,917,409 A (REEVES) 17 April 1990 (17.04.1990), Figs. 3-6.   |   | 53-55, 80, and 83            |
|  |  |   |                              |
| ì  |  |   |                              |
|  | <u> </u>   |   |                              |
| Further documents are listed in the continuation of Box C. See patent family annex.  |  |   |                              |
| Special categories of cited documents: "T" later document published after the international filing date or   |  |   |                              |
| priority date and not in conflict with the application but cited to  |  |   | the application but cited to |
| "A" document defining the general state of the art which is not considered to understand the principle or theory underlying the invention be of particular relevance   |  |   |                              |
| "X" document of particular relevance; the claimed invention cannot be  |  |   |                              |
|  | pplication or patent published on or after the international filing                                    | considered novel or cannot be consi-<br>step when the document is taken alo |                              |
| date step when the document is taken alone   |  |   |                              |
| "I." document which may throw doubts on priority claim(s) or which is cited "Y" document of particular relevance; the claimed invention cannot be to establish the publication date of another citation or other special reason considered to involve an inventive step when the document is |  |   |                              |
| to estable   | lish the publication date of another citation or other special reason                                  | considered to involve an inventive a<br>combined with one or more other su  |                              |
| combination being obvious to a person skilled in the art   |  |   |                              |
| "O" document referring to an oral disclosure, use, exhibition or other means   |  | "&" document member of the same paten                                       | t family                     |
| *P" document published prior to the international filing date but laser than the   |  |   |                              |
| priority date claimed  |  |   |                              |
| Date of the actual completion of the international search  |  |   | a on report                  |
| 22 December  | er 2004 (22.12.2004)   | <b>19</b> JAN 2005  |                              |
|  |  | Authorized officer  |                              |
|  |  | David Baggall II be and   |                              |
| D D D  |  | David Bagnell V +   |                              |
| P.O. Box 1450<br>Alexandria, Virginia 22313-1450   |  | Telephone No. 703-308-1113  |                              |
| Facsimile No. (703) 305-3230   |  |   |                              |
| , seeming 1.0. (1.00) 000 0000   |  |   |                              |

Form PCT/ISA/210 (second sheet) (January 2004)